



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

and immediately cease on the cessation of that power. Thus do these two modes of action stand in the same general antithetical relation to one another as the positive and negative conditions of electricity, the northern and southern polarities of ordinary magnetism, or the lines of electric and of magnetic force in magneto-electricity. Of these phenomena, the diamagnetic are the most important, from their extending largely, and in a new direction, that character of duality which the magnetic force was already known, in a certain degree, to possess. All matter, indeed, appears to be subject to the magnetic force as universally as it is to the gravitating, the electric, the cohesive and the chemical forces. Small as the magnetic force appears to be in the limited field of our experiments, yet when estimated by its dynamic effects on masses of matter, it is found to be vastly more energetic than even the mighty power of gravitation, which binds together the whole universe: and there can be no doubt that it acts a most important part in nature, and conduces to some great purpose of utility to the system of the earth and of its inhabitants.

Towards the conclusion of the paper, the author enters on theoretical considerations suggested to him by the facts thus brought to light. An explanation of all the motions and other dynamic phenomena consequent on the action of magnets on diamagnetic bodies might, he thinks, be offered on the supposition that magnetic induction causes in them a state the reverse of that which it produces in magnetic matter: that is, if a particle of each kind of matter were placed in the magnetic field, both would become magnetic, and each would have its axis parallel to the resultant of magnetic force passing through it; but the particle of magnetic matter would have its north and south poles opposite to, or facing the contrary poles of the inducing magnet; whereas, with the diamagnetic particles, the reverse would obtain; and hence there would result, in the one substance, approximation; in the other, recession. On Ampère's theory, this view would be equivalent to the supposition that, as currents are induced in iron and magnetics, parallel to those existing in the inducing magnet or battery wire, so, in bismuth and other diamagnetics, the currents induced are in the contrary direction. As far as experiment yet bears upon such a notion, the inductive effects on masses of magnetic and diamagnetic metals are the same.

January 15, 1846.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

James B. Neilson, Esq. was elected a Fellow of the Society.

"On the Viscous Theory of Glacier Motion." By James D. Forbes, Esq., F.R.S. &c. Part II. "An attempt to establish by observation the Plasticity of Glacier Ice."

The first two sections of the present memoir are occupied with a critical examination of the theory advanced by De Saussure to account for the progressive motion of glaciers, which he considered as formed of masses of rigid and inflexible ice, and with the further explanations of that theory given by Ramaud, Bischoff, Agassiz, and Studer. The author, on the other hand, regarding these masses as possessing a considerable degree of plasticity, explains on that supposition the phenomena they present; and, in the third section of the paper, he relates a series of experiments which he carried on in the Mer de Glace, near Chamouni, in the summer of 1844, with a view to determine by direct measurement the relative motion of different parts of the glacier. This he accomplished by selecting a spot on the western side of the Mer de Glace, between Trelaporte and l'Angle, where the ice was compact and free from fissures, and erecting on the surface a row of posts at short distances from one another, in a line transverse to the general direction of the moving mass. He was thus enabled to discover by trigonometrical observations the movements of different points in this line; and he ascertained that they advanced more and more rapidly in proportion as they were distant from the sides of the glacier; and that when not under the influence of neighbouring *crevasses*, these motions were gradual and uninterrupted; as was shown by the lines carried through the posts forming, after the lapse of a few days, a continuous curve, of which the convexity was turned towards the lower end of the glacier.

“An Account of the Southern Magnetic Surveying Expedition.” By Lieut. H. Clerk, R.A., in a letter to Lieut.-Colonel Sabine, R.A., F.R.S. Communicated by Lieut.-Colonel Sabine.

The letter, which is dated from the Magnetical Observatory at the Cape of Good Hope, June 28, 1845, reports the return to the Cape of the Pagoda from her voyage to the high southern latitudes after the successful completion of the magnetical service on which she had been employed by direction of the Lords Commissioners of the Admiralty, at the request of the President and Council of the Royal Society.

January 22, 1846.

SIR WILLIAM BURNETT, V.P. in the Chair.

Golding Bird, M.D., the Rev. James Booth, D.D., Richard Dugard Grainger, Esq., and Theophilus Thompson, M.D., were elected Fellows of the Society.

“On the Supra-renal, Thymus and Thyroid Bodies.” By John Goodsir, Esq. Communicated by Richard Owen, Esq., F.R.S. &c.

In this paper, the author enters on the developement of the theory he advanced two years ago with regard to the origin and nature of